

10 wherein the insulating layer has a protrusive portion which is higher than a height of a flat portion of the insulating layer near a boundary between an inclined portion and a flat portion having a substantially uniform thickness, and

11 wherein a part of the wiring is formed on the protrusive portion, and the wiring comprises a copper layer and a nickel layer formed on the copper layer.

36 A semiconductor apparatus according to claim 35,
wherein the electrically insulating layer relaxes stress occurring between the semiconductor device and a substrate mounting the semiconductor device.

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37. A semiconductor apparatus according to claim 35,
wherein the wiring has a redundancy to deforming of a stress relaxation layer by a wiring portion formed on the protrusive portion.

38. A semi conductor apparatus according to claim 35,
wherein the wiring comprises a copper layer formed by electroplating and a nickel layer formed on the copper layer by electroplating.

39. A semiconductor apparatus according to claim 35,
wherein, when the copper layer is deformed subject to deformation of the electrically insulating layer, the nickel layer serves to restore the copper layer to its original shape before deformation.

40. A semiconductor apparatus according to claim 35,
wherein the electrically insulating layer is formed by printing by use of a mask.

41. A semiconductor apparatus according to claim 40,
wherein the electrically insulating layer includes particles.

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42 A semiconductor apparatus according to claim 35,
wherein the electrically insulating layer has a thickness in a range of from 35
to 150 micrometers. (cl 7, l 5-6)

43. A semiconductor apparatus according to claim 35, further comprising
an electrode pad formed on the semiconductor device;
wherein the electrically insulating layer is formed in a range of the electrode
pad being not covered on the semiconductor device.

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44. A semiconductor apparatus according to claim 35,
wherein the wiring further has a Cr layer between the electrically insulating
layer and the Cu layer.

45. A semiconductor apparatus according to claim 44,
wherein the Cr layer has a thickness in a range of from 75 nanometers to 015
micrometers.

46. A semiconductor apparatus according to claim 35,
wherein the external connection terminal has a first external connection
terminal formed on the flat portion of the electrically insulating layer and a second
external connection terminal formed on the inclined portion of the electrically
insulating layer.

47. A semiconductor apparatus according to claim 35,
wherein the external connection terminal has a first external connection terminal formed near the center of the electrically insulating layer and a second external connection terminal formed more outwardly from the center of the electrically insulating layer than the first external connection terminal; and

wherein, when the semiconductor apparatus is mounted on a substrate, a contact angle 2 between the first external connection terminal and the electrically insulating layer is smaller than a contact angle 1 between the second external connection terminal and the electrically insulating layer.

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48. A semiconductor apparatus according to claim 35,
wherein some of the external connection terminals near an outer circumference of the semiconductor apparatus are not electrically connected to the wiring.

49. A semiconductor apparatus comprising:
a semiconductor device;
an electrically insulating layer having an inclined portion formed by printing an electrically insulating material by use of a mask;
an external connection terminal formed on the electrically insulating layer; and
a wiring formed on the electrically insulating layer and provided for electrically connecting the external connection terminal to a circuit electrode of the semiconductor device,

\ wherein the electrically insulating layer has a thickness in a range of from 35
10 to 150 micrometers and a protrusive portion, the position of which is higher than a
electrically near a boundary b/w the inclined portion and the
\\ flat portion of the insulating layer having an substantially uniform thickness, and flat portion
wherein a part of the wiring is formed on the protrusive portion, and the wiring
includes a copper layer and a nickel layer formed on the copper layer.

C 50. A semiconductor device comprising:

a semiconductor device;

an electrically insulating layer having an inclined portion formed by printing an
electrically insulating material by use of a mask;

B2 an external connection terminal formed on the electrically insulating layer; and

an external connection terminal formed on the electrically insulating layer and provided for electrically
connecting the external connection terminal to a circuit electrode of the
Cmt. semiconductor device,

wherein the electrically insulating layer has a protrusive portion, the position of
10 which is higher than a flat portion of the insulating layer having a substantially
uniform thickness, and

wherein a part of the wiring is formed on the protrusive portion, and the wiring
includes a copper layer and a nickel layer formed on the copper layer.